

IN THE CLAIMS

The following listing of claims will replace all prior versions, and listings, of claims in the present application:

1. (Currently Amended) A method of forming a polymeric nanocomposite material comprising:

providing a nanosize material;  
combining said nanosize material with a solvent to form a solution mixture;  
adding a polymer to said solution mixture to form a substantially homogeneous mixture, wherein said polymer is selected from polyurethanes, polyolefins, polyamides, polyimides, epoxy resins, silicone resins, polycarbonate resins, acrylic resins, or aromatic-heterocyclic rigid-rod and ladder polymers; and  
removing said solvent from said mixture.

2. (Currently Amended) The method of claim 1 wherein said nanosize material is selected from ~~the group consisting of~~ vapor grown carbon nanofibers, carbon nanotubes, ~~layered silicates, nanosize spherul silica, and~~ graphite nanoparticles.

3. (Original) The method of claim 1 in which said solvent is removed by evaporation.

4. (Original) The method of claim 1 in which said solvent is removed by coagulation.

5. (Canceled)

6. (Currently Amended) The method of claim 1 in which said solvent is selected from ~~the group consisting of~~ dimethyl sulfoxide, tetrahydrofuran, acetone, methylene chloride, toluene, xylene, sulfuric acid, methanesulfonic acid, polyphosphoric acid, N,N-dimethyl acetamide, butyl acetate, ~~and~~ or mixtures thereof.

7. (Currently Amended) The method of claim 2 in which said vapor grown carbon nanofibers are selected from ~~the group consisting of~~ as-grown fibers, pyrolytically stripped fibers, and/or heat treated fibers.

8. (Original) The method of claim 2 wherein said carbon nanotubes comprise single-walled or multi-walled nanotubes.

9. (Currently Amended) The method of claim 1 including adding a dispersing agent to said solution mixture, said dispersing agent selected from ~~the group consisting of~~ oils, plasticizers, and/or surfactants.

10. (Original) The method of claim 1 including adding a curing agent after removing said solvent from said mixture.

11. (Currently Amended) The method of claim 10 wherein said curing agent is selected from ~~the group consisting of~~ amines and/or metallic catalysts.

12-17. (Canceled)

18. (Currently Amended) A method of forming a polymeric nanocomposite material comprising:

providing a nanosize material;

providing a polymer, wherein said polymer is selected from polyurethanes, polyolefins, polyamides, polyimides, epoxy resins, silicone resins, polycarbonate resins, acrylic resins, or aromatic-heterocyclic rigid-rod and ladder polymers;

combining said nanosize material and said polymer with a solvent to form a substantially homogeneous mixture; and

removing said solvent from said mixture.

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19. (Currently Amended) The method of claim 18 wherein said nanosize material is selected from ~~the group consisting of~~ vapor grown carbon nanofibers, carbon nanotubes, ~~layered silicates, nanosize spherulitic silica, and/or~~ graphite nanoparticles.

20. (Canceled)

21. (New) The method of claim 18 in which said solvent is removed by evaporation.

22. (New) The method of claim 18 in which said solvent is removed by coagulation.

23. (New) The method of claim 18 in which said solvent is selected from dimethyl sulfoxide, tetrahydrofuran, acetone, methylene chloride, toluene, xylene, sulfuric acid, methanesulfonic acid, polyphosphoric acid, N,N-dimethyl acetamide, butyl acetate, or mixtures thereof.

24. (New) The method of claim 18 including adding a dispersing agent to said solution mixture, said dispersing agent selected from oils, plasticizers, or surfactants.

25. (New) The method of claim 18 including adding a curing agent after removing said solvent from said mixture.

26. (New) The method of claim 25 wherein said curing agent is selected from amines or metallic catalysts.

27. (New) The method of claim 18 further comprising adding a coupling agent.

28. (New) The method of claim 1 further comprising adding a coupling agent.